GAVRILOV, Ye. K.

GORYAYNOV, Kirill Emmanuilovich, doktor tekhn.nauk; GAVRILOV, Ye.K.,
nauchnyy red.; PRUDNIKOVA, M.N., red.; GILENSON, P.G., tekhn.red.

[Manufacturing mineral wool and mineral-wool products] Tekhno-
logiia mineral'noi vaty i izdelii iz nee. Moskva, Gos. izd-vo
lit-ry po stroit., arkhit. i stroit. materialam, 1958. 177 p.
                    (Mineral wool)   (MIRA 12:1)

GAVRILOV, Ye.K.

Intensification of production. Stroi. mat. 5 no.1:26 Ja '59.
(MIRA 12:1)

1.Glavnyy inzhener Tul'skogo zavoda po proizvodstvu stroitel'nykh
materialov.
(Tula--Building materials industry)

VOLOBUYEV, M.I.; ZYKOV, S.I.; STUPNIKOVA, N.I.; MUSATOV, D.I.; GAVRILOV, Ye.Ya.

Absolute age of granitoid complexes in the Yenisey Range. Trudy Inst. geol. i geofiz. Sib. otd. AN SSSR no.33:184-201 '63.
(MIRA 17:11)

GAVRILOV, Yu. (poselok Iliou,Kazakhskogo rayona, AzerSSR)

The seven-year plan has been fulfilled. IUn. nat. no.12:4-7
D '59   (MIRA 13:3)
          (Azerbaijan--Sheep)

GAVRILOV, Ie.N., inzh.; GONIK, A.A., kand. tekhn. nauk; DONSKOY,
        I.P., kand. tekhn. nauk; ZHUKOV, G.A., inzh.[deceased];
        LAZAREV, M.P., inzh.; NEFEDOV, S.I., inzh.; PETROV,
        Ya.P., kand. tekhn. nauk; SAVEL'YEV, V.V., kand. tekhn.
        nauk; FILIMONOV, S.S., inzh.; SHUL'TS, G.F., kand. tekhn.
        nauk; ZOTOV, N.V., inzh., retsenzent; ORLOV, N.N., inzh.,
        otv. red.; KOZLOV, A.D., red.izd-va; AKOPOVA, V.M.,
        tekhn. red.

[Water transportation of lumber] Vodnyi transport lesa;
spravochnik. Moskva, Goslesbumizdat, 1963. 560 p.
                              (MIRA 16:11)
        (Lumber--Transportation)

GAVRILOV, Yu.

Taking over from the grown-ups. Iun. nat. no.8:3-4 Ag '58.
(MIRA 11:9)

1.Prigorodnenskaya semiletnyaya shkola, Kurskaya oblasti'.
(Agriculture--Study and teaching)

GAVRIIOV, Yu. (Selo Borovitsy Chigirinskogo rayona, Cherkasskoy oblasti)

A place in life. IUn. nat. no.10:26-27 O '58.   (MIRA 11:10)
(Collective farms)

VOLKOV, A.; GAVRILOV, Yu.; KHOLKIN, V. (g.Revda); VOLKOV, N. (g.Rezh.
Sverdlovskoy oblasti); GRIGOR'YEV, V., gornyy inzh.; TISHCHENKO,
N., gornyy inzh.

Our readers' letters. Izobr. i rats. no.10:42-44 O '58.
(MIRA 11:11)

1. Nachal'nik byuro sodeystviya izobretatel'stvu i ratsionalisatsii
Zaporozhskogo transformatornogo zavoda (for Gavrilov). 2. Nachal'-
nik byuro sodeystviya izobretatel'stvu i ratsionalisatsii Sredne-
ural'skogo medeplavil'nogo zavoda (for Kholkin).
      (Efficiency, Industrial)   (Inventions)

GAVRIIOV, Yu.

They are capable of anything. IUn. nat. no.1:2-3 Ja '59.

(MIRA 11:12)

(Education, Cooperative)

GAVRILOV, Yu.

New generation grows up. IUn.nat. no.2:3-5 F '59.

(MIRA 12:1)

(Koltushi--Schools)

GAVRILOV, Yu.

The Siberian apple. IUn. nat. no.8:1-3 Ag '59.

(MIRA 12:10)

(Altai Territory--Apple)

GAVRILOV, Yuriy Aleksandrovich; LANINA, L.I., red.; NAZAROVA, A.S., tekhn.
     red.

     [At the other end of the world; Moscow - Antarctica - Moscow]
     Za trideviat' zemel'; Moskva - Antarktida - Moskva. Moskva,
     Izd-vo "Znanie," 1962. 47 p. (Novoe v zhizni, nauke, tekhnike.
     X Seriia: Molodezhnaia, no.13)   (MIRA 15:7)
                              (Antarctic regions)

GAVRILOV, Yuriy Aleksandrovich; YAKOVLEVA, L., red.

    [We are flying to Antarctica] My letim v Antarktidu.
Moskva, Molodaia gvardiia, 1964. 143 p.   (MIRA 17:5)

GAVRILOV, Yu.K.; BOLBOCHAN, Ye.K., nauchnyy sotrudnik

      Station for the preparation of working solutions. Zashch. rast.
      ot vred. i bol. 8 no.5:29-30 My '63.   (MIRA 16:9)

      1. Kalarashskoye proizvodstvennoye upravleniye. 2. Upravlyayushchiy
      otdeleniyem sovkhoza "TSvetushchaya Moldaviya" (for Gavrilov).
      3. Moldavskiy filial Vsesoyuznogo instituta zashchity rasteniy (for
      Bolbochan).
                   (Moldavia—Agricultural chemicals)

GAVRILOV, Yuriy Aleksandrovich, spets. korrespondent; ANTIPINA, L.,
red.

[Barcelona, Toledo, Madrid] Barselona, Toledo, Madrid.
Moskva, Molodaia gvardiia, 1965. 141 p. (MIRA 18:12)

1. Spetsial'nyy korrespondent "Pravdy" (for Gavrilov).

GAVRILOV, Yu.M.

On convergence of simple iterates and on the criteria of symbol definiteness of quadratic forms. Dop.AN URSR no.6:389-393 '53.

(MLRA 7:1)

1. L'vivs'kiy lisotekhnichniy institut. Predstaviv diysniy chlen Akademii nauk Ukrains'koi RSR.

(Matrices) (Forms, Quadratic)

GAVRILOV, Yu. M.

"Methods of Series Approximations for the Solution of Systems of Linear Algebraic Equations of Structural Mechanics." Cand Tech Sci, L'vov Polytechnic Inst, L'vov, 1954. (RZhMat, Mar 55)

SO: Sum. No. 670, 29 Sep 55--Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (15)

GAVRILOV, Yu.M.

Convergence of iterative processes and criteria for sign determina-
tion of quadratic forms. Izv.AN SSSR Ser.mat.18 no.1:87-94 Ja-F '54.

(MLRA 7:2)

1. Predstavleno akademikom S.L.Sobolevym.

(Forms, Quadratic) (Matrices)

GAVRILOV, Yu. M.

124-11-13327

Translation from: Referativnyy Zhurnal, Mekhanika, 1957, Nr 11, p 147 (USSR)

AUTHOR: Gavrilov, Yu. M.

TITLE: The Calculation of Statically Indeterminate Trusses by Means of the Binomial Iteration Method.   (Raschet   staticheski neopredelimykh ferm metodom dvukhchlennoy iteratsii.)

PERIODICAL: Nauchn. zap. L'vovsk. politekhn. in-ta, 1956 (1957), Nr   38, pp 112-118 (Ukrainian).

ABSTRACT: Utilizing the binomial iteration method, the author derived the calculation of a multi-panel X truss joints through the determination of the deflection of the joints of that panel which is subjected to the greatest stresses from the beam moment; this is done in lieu of the deflections of all of its joints according to Southwell's relaxation method. The calculation of the truss for the action of an arbitrary load is performed in parts, namely, for the symmetrical and the anti-symmetrical loading components. In an example it is shown that the application of the binomial iteration method yields adequate accuracy so long as the calculation area is held sufficiently small.

Card 1/1

N. K. Snitko

GAVRILOV   Yu. M.

16.6500

385 1

S/044/62/000/005/044/072
C111/C444

AUTHOR: Havryliv, Yu. M.

TITLE: On the velocity of the convergence of iteration processes
             at the solution of linear algebraic equations

PERIODICAL: Referativnyy zhurnal, Matematika, no. 5, 1962, 41,
             abstract 5V197. ("Nauchn. zap. L'vovsk. politekhn. in-t.
             Ser. geod.", 1959, no. 5, 141-151

TEXT: Investigated is the velocity of the convergence of itera-
tion processes which are related to simple iterations. The following
theorem is proved: the number of the cycles V which is sufficient in
order to obtain approximations with the relative mean error $\eta^{(v)}$, is
not higher than the absolute value of the quotient of the logarithm of
this error and of the logarithm of the corresponding maximal column sum
μ. Basing on the formula

$$\nu \leqslant |\ln \eta^{(v)}| / |\ln \mu|$$ one constructs a diagram of the number of

cycles ν_μ which are sufficient in order to obtain relative mean errors
η. By the example of a concrete system of four equations one shows the
Card 1/2

On the velocity of the convergence ...

S/044/62/000/005/044/072
C111/C444

high exactness of this formula (especially by the application on simple iterations).

[Abstracter's note: Complete translation.]

Card 2/2

PANKRATOV, N.S., kand. tekhn. nauk; POKAMESTOV, V.V.; LUK'YANOV, A.D.;
GAVRILOV, Yu.M.; IVANOV, Yu.I.; KONDRASHOV, A.S.; MAYEVSKAYA,
K.T.; MALKOV, L.M.; FOMIN, V.K.; KOLOTUSHKIN, V.I., red.;
LARIONOV, G.Ye., tekhn. red.

[New equipment and technology of peat-bog preparation and the
winning of granulated peat] Novaia tekhnika i tekhnologiia bolotno-
podgotovitel'nykh rabot i dobychi granulirovannogo torfa. Moskva,
Gos. energ. izd-vo, 1961. 86 p.   (MIRA 15:2)

1. Leningrad. Vsesoyuznyy nauchno-issledovatel'skiy institut tor-
fyanoy promyshlennosti. Direktor filiala Vsesoyuznogo nauchno-
issledovatel'skogo instituta torfyanoy promyshlennosti (for
Pankratov).
                 (Peat bogs)   (Peat machinery)

MITIN, V. F., kand. tekhn. nauk; GAVRILOV, Yu. M., inzh.;
PERSIKOV, V. I.

Equipment MK-1,8 for the ETU-0, 75A excavator. Torf. prom. 40
no.3:13-15 '63.   (MIRA 16:4)

1. Kalininskiy filial Vsesoyusnogo nauchno-issledovatel'skogo
instituta torfyanoy promyshlennosti.

(Peat machinery)

SOV/179-59-3-9/45

AUTHORS: Bolotin, V. V., Gavrilov, Yu. V., Makarov, B. P. and
         Shveyko, Yu. Yu. (Moscow)

TITLE: Non-linear Problems of Stability of Plane Panels at
         High Supersonic Velocities (Nelineynyye zadachi
         ustoychivosti ploskikh paneley pri bol'shikh
         sverkhzvukovykh skorostyakh)

PERIODICAL: Izvestiya Akademii nauk, SSSR, Otdeleniye tekhnicheskikh
         nauk, Mekhanika i mashinostroyeniye, 1959, Nr 3,
         pp 59-64 (USSR)

ABSTRACT: The paper is a continuation of previous work (Refs 1 and 6).
         The question of the stability of plates and shells,
         exposed to a current of compressed gas, has so far been
         discussed in terms of a linear representation (Refs 1-5).
         For sonic flow and for moderate supersonic numbers M
         this hypothesis is apparently completely justified.
         However, for larger supersonic velocities, aerodynamic
         non-linearity becomes very appreciable. As was shown
         by Bolotin (Ref 5), solutions different from the
         unperturbed ones appear in aeroelastic problems, allowing
         for aerodynamic non-linearity, at velocities below the
Card 1/4 critical value. Among these solutions are some which are

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Non-linear Problems of Stability of Plane Panels at High Supersonic
Velocities

stable in relation to sufficiently small disturbances.
These solutions can be realised if the elastic system
which is subjected to the sub-critical velocity is
sufficiently irregular. All real constructions have some
irregularities (defects of manufacture, deformations
arising from aerodynamic heating, vibrations under the
influence of atmospheric turbulence and other non-
stationary factors, etc.). Thus in some cases, the
critical velocity determined by the linear aeroelastic
theory is only a lower limit to the critical velocity for
real constructions. In the present paper, the edges of
the plate are assumed to be simply supported and
elastically restrained against axial displacements; the
pressure on the plate is given by:

$$p = p_\infty \left(1 + \frac{\varkappa - 1}{2} \frac{v}{a_\infty}\right)^{\frac{2\varkappa}{\varkappa - 1}} \tag{1}$$

where p is the pressure of the unperturbed gas, v is
the normal component of surface velocity of the plate,
a_∞ is the velocity of sound in the unperturbed gas and

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Non-linear Problems of Stability of Plane Panels at High Supersonic
Velocities

$\varkappa$ is the polytropy index. The component of load normal
to the plate is

$$q = -\rho_o h \frac{\partial^2 w}{\partial t^2} - 2\rho_o h \varepsilon \frac{\partial w}{\partial t} + \triangle p \qquad (6)$$

where w is the deflection, ρ_o is the density and
h the thickness of the plate, ε is the damping coefficient,
and $\triangle$ p is the excess pressure, which can be expressed
in terms of the Mach number and polytropy index by means
of Eq (1).   The problem then reduces to the investigation
of the non-linear equation for the deflection of the
plate, which contains q, subject to the boundary
conditions.   One solution is expressed as a double sine
series and is dealt with both by an approximate
numerical method, and with the aid of an electronic
calculating machine. The results of the calculations
for particular cases are shown graphically (Figs 4, 5 and
6), and indicate the existence of flutter in the panel.

Card 3/4   Acknowledgments are expressed to N. I. Chelnokov

SOV/179-59-3-9/45

Non-linear Problems of Stability of Plane Panels at High Supersonic
Velocities

and Yu. R. Shneyder, of the Mathematical Machine
Laboratory MEI, for participating in the calculations.
There are 6 figures and 9 references, 7 of which are
Soviet and 2 English.

SUBMITTED: November 18, 1958

Card 4/4

ITSKOVICH, G eorgiy Mikhaylovich; VINOKUROV, Anatoliy Ivanovich. Pri-
     nimali uchastiye: SUDAKOVA, N.I.; GAVRILOV, Yu.V.; MAKUSHIN, V.M.,
     laureat Leninskoy premii, prof., retsenzent; LYZHENKOV, A.A.,
     inzh., retsenzent; SAFOZHKOV, N.M., nauchnyy red.; SHAURAK, Ye.N.,
     red.; KOROVENKO, Yu.N., tekhn. red.

     [Collected problems on the strength of materials] Sbornik zadach
     po soprotivleniiu materialov. Leningrad, Sudpromgiz, 283 p.
                                             (MIRA 15:6)
          (Strength of materials--Problems, exercises, etc.)

GAURILOU, Ӳ. U.
BOROVSKIY, P. V.   PHASE I BOOK EXPLOITATION   SOV/6 206 *?s*

Konferentsiya po teorii plastin i obolochek. Kazan', 1960.

Trudy Konferentsii po teorii plastin i obolochek; 24-29 oktyabrya
    1960. (Transactions of the Conference on the Theory of Plates
    and Shells Held in Kazan', 24 to 29 October 1960). Kazan',
    [Izd-vo Kazanskogo gosudarstvennogo universiteta] 1961. 426 p.
    1000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Kazanskiy filial. Kazanskiy
    gosudarstvennyy universitet im. V. I. Ul'yanova-Lenina.

Editorial Board: Kh. M. Mushtari, Editor; F. S. Isanbayeva, Secretary;
    N. A. Alumyae, V. V. Bolotin, A. S. Vol'mir, N. S. Ganiyev,
    A. L. Gol'denveyzer, N. A. Kil'chevskiy, M. S. Kornishin,
    A. I. Lur'ye, G. N. Savin, A. V. Sachenkov, I. V. Svirskiy,
    R. G. Surkin, and A. P. Filippov. Ed.: V. I. Aleksagin;
    Tech. Ed.:- Yu. P. Semenov.

PURPOSE: The collection of articles is intended for scientists and
    engineers who are interested in the analysis of strength and
    stability of shells.

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Transactions of the Conference (Cont.)

SOV/6206

75

COVERAGE: The book is a collection of articles delivered at the
Conference on Plates and Shells held in Kazan' from 24 to 29
October 1960. The articles deal with the mathematical theory
of plates and shells and its application to the solution, in
both linear and nonlinear formulations, of problems of bending,
static and dynamic stability, and vibration of regular and
sandwich plates and shells of various shapes under various
loadings in the elastic and plastic regions. Analysis is made
of the behavior of plates and shells in fluids, and the effect
of creep of the material is considered. A number of papers
discuss problems associated with the development of effective
mathematical methods for solving problems in the theory of shells.
Some of the reports propose algorithms for the solution of problems
with the aid of electronic computers. A total of one hundred
reports and notes were presented and discussed during the con-
ference. The reports are arranged alphabetically (Russian) by
the author's name.

Card 2/14

Card 5/14

GAVRILOV, Yu.V. (Moskva)

Determining frequencies of natural vibrations of elastic, circular cylindrical shells. Izv. AN SSSR. Otd. tekh.nauk.Mekh. i mashinostr. no. 1:163-166 Ja-F '61.   (MIRA 14:2)
(Elastic plates and shells—Vibration)

GAVRILOV, Yu.V. (Moskva)

Determining natural vibration frequencies of closed circular
cylindrical shells. Izv. AN SSSR. Mekh. i mashinostr. no.6:
144-146 N-D '63.   (MIRA 17:1)

KALYUZHNAYA, F.F.; PIMENOVA, K.N.; GAVRILOVA, Z.P.

Internal tension in electrodeposits of the Fe-Ni-Cr alloy.
Zhur. prikl. khim. 37 no.9:2060-2061 S '64.

(MIRA 17:10)

GAVRILOVA, A.

USSR/Farm Animals. - Cattle

Q-2

Abs Jour : Ref Zhur - Biol., No 19, 1958, No 88038

Author   : Gavrilova A.
Inst   : Krasnoyarsk Scientific-Research Institute of Agriculture
Title   : Improving the Dairy Cattle of Khakasiya

Orig Pub : Byul. nauchno-tekhn. inform. Krasnoyarskogo n.-i. in-ta
           S-kh., 1957, No 1-2, 50-52

Abstract : The crossing of local cattle with Simmenthaler bulls yielded
           hybrid cows of the dairy-beef type with a long and squat
           trunk supported on sturdy legs, 129.1 cm high at withers,
           130.9 cm high at rump, and with a trunk length of 160.4
           cm, chest depth of 64.8 cm., and circumference of the meta-
           carpus measuring 18.8 cm. The milk yield of these hybrid
           cows was 3.6 times as high as that of the local cows.

Card   : 1/1

GAVRILOV. A. A.

"Relation B etween The Number Of Translocations In D. Melanogaster And The X-Ray Dosage.
Department Of Genetics (Chief: Professor N. P. Dubinin), Institute Of Experimental Biology
(Director: Academician N. K. Koltsov) Moscow." (p. 3-1) by Khvostova, V. V. and
Gavrilova A. A.

SO: PREDECESSOR OF JOURNAL OF GENERAL BIOLOGY. (Biologicheskii Zhurnal) Vol. VII, 1938 No. 2

GAVRIIOVA, A.A.; SHISHAKOV, N.V.

Investigating the reduction phase in the continuous steam-iron method for the manufacture of hydrogen. Khim i tekh. topl. i masel 3 no.3:63-70 Mr '58.   (MIRA 11:3)

1.Institut goryuchikh iskopayemykh im. G.M. Krzhizhanovskogo AN SSSR.

                        (Hydrogen) (Iron oxides) (Reduction, Chemical)

GAVRILOVA, A. A., Candidate Tech Sci (diss) -- "A study of the continuous iron-

steam process of obtaining hydrogen with a solid reducer". Moscow, 1959.

12 pp (Acad Sci USSR, Inst of Mineral Fuels), 120 copies (KL, No 24, 1959, 135)

Gavrilfodd A.A.

GAVRILOVA, A.A.

Continuous iron-steam process for the production of hydrogen with
a solid reducing agent. Trudy IGI 12:151-157 '61. (MIRA 14:3)
    (Hydrogen) (Iron oxide) (Carbon)

LEBEDEV, V.V.; GAVRILOVA, A.A.

Kinetics of the reduction of iron oxides with carbon. Trudy IGI
16:295-300 '61.   (MIRA 16:7)
                        (Iron oxides) (Carbon)

LEBEDEV, V.V.; GAVRILOVA, A.A.

Kinetics of the formation of hydrogen from water on iron. Trudy
IGI 16:301-306 '61.
(Hydrogen) (Iron oxides) (Steam)

(MIRA 16:7)

LEBEDEV, V.V.; GAVRILOVA, A.A.

Kinetics of hydrogen production on iron oxides based on the use of
solid fuels. Trudy IGI 16:307-314 '61.   (MIRA 16:7)
          (Hydrogen) (Iron oxides) (Fuel)

AL'TSHULER, V.S.; KANAVETS, P.I.; GAVRILOVA, A.A.

Investigating kinetics of the reduction of ore-fuel
granules. Trudy IGI 22:50-56 '63.   (MIRA 16:11)

VOROB'YEV, V.G.; FEDOSEYEV, A.N.; GAVRILOVA, A.D.

Change in vascular reactions of the isolated heart of dogs with experimental atherosclerosis following a single administration of adrenalin, fenitron and vetrazin. Pat. fiziol. i eksp. terap. 8 no.1:46-49 Ja-F '64.

(MIRA 18:2)

1. Institut morfologii cheloveka (dir.- chlen-korrespondent AMN SSSR prof. A.P. Avtsyn) AMN SSSR i kafedra farmakologii farma-tsevticheskogo fakul'teta (zav.- prof. A.N. Kudrin) I Moskovskogo ordena Lenina meditsinskogo instituta imeni Sechenova, Moskva.

FEDOSEYEV, A.N.; VOROB'YEV, V.G.; GAVRILOVA, A.D.

Action of catechol amines, phenitrone and vetrazin on the vessels
of a isolated kidney in dogs with atherosclerosis. Pat. fiziol. i
eksp. terap. 9 no.5:61-63 S-O '65.   (MIRA 19:1)

1. Institut morfologii cheloveka (direktor - deystvitel'nyy chlen
AMN SSSR prof. A.P. Avtsyn) AMN SSSR i kafedra farmakologii (zav. -
prof. A.N. Kudrin) farmatsevticheskogo fakul'teta I Moskovskogo
ordena Lenina meditsinskogo instituta imeni I.M. Sechenova. Sub-
mitted June 30, 1964.

GAVRILOVA, A. I.

Synthetic studies in the area of magnoline alkaloid.
L. N. Grebacheva, E. N. Tsvetkov, L. P. Varnakova, A. I.
Gavrilova, and N. A. Preobrazhenskii (Inst. Fine Chem.
Technol., Moscow), Zhur. Obshchei. Khim. 25, 1421-7
(1955).—Keeping 3 - methoxymethyl - 4' - carbomethoxy-
methyldiphenyl ether in 25% HBr-AcOH 3 days gave 90%, 3-
bromomethyl-4'-carboxymethyldiphenyl ether, m. 107-9° (from
EtOH); with CH_2N_2 this gave the 4-carbomethoxy analog,
60%, b₁ 189-90°, which refluxed 2 hrs. with NaCN in
MePh gave 70% 3-cyanomethyl-4'-carbomethoxymethyldi-
phenyl ether, m. 45-6° (from MeOH); the 4'-carboxy analog,
m. 74-6° (from CCl₄), formed in 73% yield from the Br
analog and NaCN. Sapon. with aq. alc. NaOH gave 3,4'-
bis(carboxymethyl)diphenyl ether, m. 102-4°, which treated
with excess SOCl₂, and the resulting crude product treated
with 8-(3-methoxy-4-benzyloxyphenyl)ethylamine in CHCl₃
in the presence of 5% KOH gave 65.4% bis[8-(3-methoxy-4-
benzyloxyphenyl)ethylamide] of 3,4' - bis(carboxymethyl)di-
phenyl ether, m. 125-6° (from EtOH). This (1.15 g.) sus-
pended in MePh and treated with 3 ml. POCl₃ and refluxed
1.5 hrs. gave 3,4'-bis(6-methoxy-7-benzyloxy-3,4-dihydro-1-
isoquinolylmethyl)diphenyl ether, isolated as di-HCl salt, m.
155-42° (from EtOH); purate, m. 206-7°. Also in J. Gen.
Chem. U.S.S.R. 25, 1360-71(1955)(Engl. translation).

G. M. K.

AUTHORS: Sergiyevskaya, S. I., Levshina, K. V.,   SOV/79-28-7-24/64
             Chizhov, A. K., Gavrilova, A. I., Kravchenko, A. I.

TITLE: N-Di(Ethyl Chloride) Amines of the Alicyclic Series. I(N-Di
             (khloretil) aminy alitsiklicheskogo ryada. I)

ABSTRACT: The authors discuss the synthesis and some properties of the
             dichloroalkylamines of the cyclopentane-, cyclohexane- and
             cycloheptane series. They synthetized the compounds of two
             types: In the one (Formula I) the di(chloroalkyl) amino group
             is directly bound to the carbon of the nucleus, and in the
             other to the carbon of the side chain (II). The compounds of
             type (II) are alicyclic derivatives of methyl-N-bis (ethyl
             chloride) amine which is of importance for medicine. The two
             methods used most were employed for the synthesis of N-di(ethyl
             chloride) amine: according to the one [=(a) of Table 1] the
             ethylene oxide reacts with the amino compounds, according to
             the other [=(b) of Table 1] the compounds containing halogens
             are caused to react with diethanol amine. The final stage, i.e.
             the substitution of the hydroxyl groups by chlorine is the same

Card 1/3

N-Di(Ethyl Chloride) Amines of the Alicyclic Series. I   SOV/79-28-7-24/64

for both methods, according to the specific characteristic features of the N-di(oxyethyl)amines. The synthesis of the dichloro-alkyl amines of type (I) had to be carried out according to method (a). The necessary alicyclic amines as initial products had been obtained in the cyclopentane and cycloheptane series by the reduction of the ketone oximes, and in the cyclohexane series by the catalytic hydration of the aromatic amino compounds. The chloro-methyl derivatives of the same alicyclic hydrocarbons served as initial products for the synthesis of the compounds of type (II). The chloro-methyl cycloalkanes were obtained according to the reaction scheme mentioned. Thionyl chloride served as chlorination agent (I and II)(substitution of hydroxyl by chlorine).There are 2 tables and 8 references, 2 of which are Soviet.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S.Ordzhonikidze (All-Union Scientific Chemical and Pharmaceutical Institute imeni S. Ordzhonikidze)

Card 2/3

N-Di(Ethyl Chloride) Amines of the Alicyclic Series. I   SOV/79-28-7-24/64

SUBMITTED: February 7, 1957

1. Dichloroalkylamines--Synthesis   2. Dichloroalkylamines--Properties
3. Cyclic compounds--Molecular structure   4. Ethyl chloride amines
--Chemical properties

Card 3/3

7/79-28-7-25/64

AUTHORS: Sergiyevskaya, S. I.,   Lovshina, K. V.,   Gavrilova, A. I.,
Chizhov, A. K.

TITLE: N-Di (Chloro-Ethyl) Amines with Alicyclic and Aromatic Radi-
cals in the Molecules. II (N-di(khloretil)aminy s alitsikli-
cheskimi i aromaticheskimi radikalami v molekulakh. II)

ABSTRACT: The aim of the present investigation was the synthesis of the
N-di(chloro-ethyl)amines which simultaneously have an aromatic
and an alicyclic radical in the molecule. The structures of
these compounds may be seen from the reaction scheme: the
compounds (I) and (II) appear as arylated analogs of some
N-di(chloro-ethyl)amines of the alicyclic series already ear-
lier described by the authors (Ref 1). The compounds (III)
differ from (I) and (II) by the fact that the aromatic radi-
cal is not a component of the alicyclic radical. The correspond-
ing cyanogen compounds served as initial products, viz., the
nitriles aR-CN for the types (I) and (II), and the nitrile

Card 1/4

N-di (Chloro-ethyl) Amines with Alicyclic and Aromatic radicals in the molecules. II

$R-CH-CN$, for type (III), where R denotes an alicyclic radical.

C_6H_5

All these nitriles are easily obtained by the condensation of the cyanobenzlles with 1,4-dibromobutane, 1,5-dibromopentane and bromocyclohexane in the presence of sodium amide. The reduction of the nitriles to primary amines was carried out either catalytically with hydrogen or by means of lithium-aluminum hydride. The transition from amines to their N-di-(ethyloxy)-derivatives and from these to the N-di(chloroethyl) amines took place according to reference 1. In the purification of the hydrogen chloride salts of the above mentioned amines the solvents had to be selected carefully. The authors synthesized the hitherto not described N-di(chloroethyl) amines and some other compounds of the cyclopentane- and cyclohexane series. There are 1 table and 5 references, 3 of which are Soviet.

Card 2/5

N-Di (Chloro-Ethyl) Amines With Alicyclic and Aromatic Radicals in the   SOV/79-28-7-25/64
Molecules. Il

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevti-
cheskiy institut imeni S. Ordzhonikidze (All-Union Scienti-
fic Chemical and Pharmaceutical Research Institute imeni
S. Ordzhonikidze)

SUBMITTED: February 7, 1957

1. Ethyl chloride amines--Molecular structure   2. Ethyl chloride
--Synthesis   3. Cyclic compounds--Chemical properties

Card 3/3

85660

53630   2209, 1287, 1266

S/079/60/030/009/017/022/XX
B00·/B066

AUTHORS: Petrov, K. A., Gavrilova, A. I., and Kopylov, A. M.

TITLE: Ethylene Amido Phosphonates

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 9,
              pp. 2863 - 2868

TEXT: Ethylene amido phosphonates and thiophosphates containing some
ethylene amide groups in the molecule have active biological properties
(cf Ref. 1). The present paper describes the following amido phos-
phonates hitherto unknown: N,N'-diethylene amide of chloro-methyl
phosphinic acid, N,N'-diethylene amide of β-chloro-ethyl phosphinic
acid, N,N'-diethylene amide of vinyl phosphinic acid, N,N'-diethylene
amide of N"-piperidino-β-ethyl phosphinic acid, and N, N', N", N"'-
tetraethylene amide of ethylene diphosphonic acid (Ref. 2). N,N'-
diethylene amide of chloro-methyl phosphinic acid was obtained from
ethylene imine and the acid dichloride of the latter (Ref. 3).
N,N'-diethylene amide of β-chloro-ethyl phosphinic acid was synthesized

Card 1/3

65660

Ethylene Amido Phosphonates

S/079/60/030/009/017/022/XX
B001/B066

in the same way. As previously, also in this case only two chlorine
atoms which are directly bound to the phosphorus were substituted. The
chlorine atom in the β-position of the acid chloride is partially split
off as HCl which gives an end product that is slightly contaminated
by the diethylene amide of vinyl phosphinic acid which is difficult
to separate. The chlorine content of the end product repeatedly
fractionated in a vacuum was always lower than the theoretical chlorine
content, which is due to partial separation of HCl and formation of
the above diamide. N,N'-diethylene amide of vinyl phosphinic acid in
a high yield resulted from ethylene imine and the acid dichloride of
vinyl phosphinic acid. N,N'-diethylene amide of N"-piperidino-β-ethyl
phosphinic acid was obtained by reacting the diamide of vinyl phos-
phinic acid with piperidine:

$$CH_2=CHP \quad \left(N \begin{matrix} CH_2 \\ | \\ CH_2 \end{matrix} \right)_2 \quad + \quad HN \quad \longrightarrow \quad N-CH_2CH_2P \quad \left(N \begin{matrix} CH_2 \\ \\ CH_2 \end{matrix} \right)_2$$
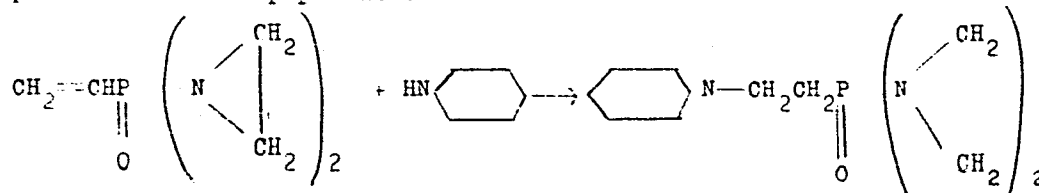
Card 2/3

85660

Ethylene Amido Phosphonates
S/079/60/030/009/017/022/XX
B001/B066

If no alcoholate is used (as a catalyst), this reaction gives only a
small yield. N, N', N", N"'-tetraethylene amide of ethylene diphos-
phonic acid was obtained by reacting the acid tetrachloride of
ethylene diphosphinic acid with ethylene imine. This reaction had
to be carried out, not in dry benzene (as in the first case), but in
dry chloroform. The fractional recrystallization of the tetramide was
effected from benzene. There are 1 table and 5 references: 1 Soviet,
1 German, 2 US, and 1 Japanese.

SUBMITTED: August 18, 1959   X

Card 3/3

LEVSHINA, K.V.; GAVRILOVA, A.I.; SEROIYEVSKAYA, S.I.

Bis (β-chloroethyl) amines of bicyclic compounds. Part 1:
Bis (β-chloroethyl) amines of the indan series. Zhur. ob.
khim. 30 no.11:3634-3639 N'60.   (MIRA 13:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut imeni. S.Ordshonikidze.
            (Amines) (Indan)

15-8150   1372, 2205, 2405

27508
S/079/61/031/009/009/012
D215/D306

AUTHORS: Petrov, K.A., Gavrilova, A.I., Shatunov, V.K., and
Korotkova, V.P.

TITLE: Diethyleneimides of β-aminoethylphosphinic and
thiophosphinic acids. II

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 9, 1961,
·3076 - 3081

TEXT: The present work is a continuation of an earlier work, in
which the authors showed that diethyleneimidovinylphosphonates and
vinylthiophosphonates as well as esters of vinylphosphinic acid
form addition compounds with mercaptans and alcohols to form cor-
responding ethyleneimides of alkylphosphinic and alkylthiophosphi-
nic acids. In continuing the investigations, the authors studied
the addition of secondary and primary amines to diethyleneimides
of vinylphosphinic and vinylthiophosphinic acids. The amines used
were diethylamine, ethyleneimine, piperidine, morpholine, dibenzy-

Card 1/3

Diethyleneimides of ...

27508
S/079/61/031/009/009/012
D215/D306

lamine and allylamine; they were found to add to imides of vinyl-
phosphinic and vinylthiophosphinic acids to form imides of β-amino-
ethylphosphonates and thiophosphonates, according to the following
reaction:

$$CH_2=CH-P\left(N<{CH_2 \atop CH_2}\right)_2 + HNR_2 \longrightarrow R_2NCH_2CH_2P\left(N<{CH_2 \atop CH_2}\right)_2 .$$
$$\underset{O(S)}{\|} \qquad\qquad \underset{O(S)}{\|}$$

Diethylamine, piperidine and ethyleneimine readily combine at room
temperature over a period of 1.5-2 days or at 40-50° C. for 4-5 hrs.
Dibenzylamine and allylamine react in the presence of catalytic
quantities of sodium alcoholate. In all cases it is advisable to
use equimolecular quantities without a solvent. Addition of amines
to the imides of the acids is more difficult than in the case of
the addition of amines to neutral esters of the acids. The addi-
tion products of piperidine, morpholine and diethylamine with the
imides of the acids were purified by vacuum distillation (10^{-4} mm);
the products of the other amines decomposed on distilling. All di-

Card 2/3

27508

Diethyleneimides of ...

S/079/61/031/009/009/012
D215/D306

ethylene-imides of aminophosphonates and aminothiophosphonates were viscous, colorless liquids, soluble in benzene, chloroform, ether and alcohol and are stable at temperatures below 0°C. Prolonged storing at room temperature results in gradual polymerization which is due to the opening of the ethyleneimide rings and results in the production of linear polymers either without a phosphorus residue or with the phosphorus residue binding the main chains of the macromolecule. The compounds which were prepared and their pro- perties are summarized in tabulated form. Preparation of compounds 1-7 and 9 was conducted at room temperature and of compounds 8, 10, and 11 at 80°C in the presence of sodium ethoxide. There are 2 ta- bles and 3 Soviet-bloc references.

SUBMITTED: September 5, 1960

Card 3/3

15-8150

27509
S/079/61/031/009/010/012
D215/D306

AUTHORS: Petrov, K.A., Gavrilova, A.I., Shatunov, V.K., and
Korotkova, V.P.

TITLE: Diethyleneimides of alkyl- and alkenylthiophosphinic
and phosphinic acids. I

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 9, 1961,
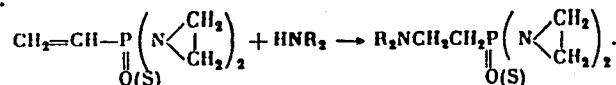3081 - 3085

TEXT: The authors studied the properties of diethyleneimides of
alkyl- and alkenylthiophosphinic and allylphosphinic acids, and
investigated the addition of mercaptans and alcohols to diethylene-
imides of vinylphosphinic and vinylthiophosphinic acids. Their aim
was to prepare imidophosphonates and thiophosphonates containing
ether and thioether groups in a radical bonded with phosphorus
through carbon. Diethyleneimides of alkyl- and alkenylthiophosphi-
nic and allylphosphinic acids were prepared by reacting the corres-
ponding acid chlorides with ethyleneimine in dry benzene or ether

Card 1/3

Diethyleneimides of alkyl- ...

27509
S/079/61/031/009/010/012
D215/D306

in the presence of a tertiary base (HCl acceptor) at 5-10°C accor-
ding to the following reaction:

$$R-\underset{\underset{S(O)}{|}}{PCl_2} + 2HN\underset{CH_2}{\overset{CH_2}{\diagdown}}\xrightarrow[-R_3N \cdot HCl]{2R_3N} R-\underset{\underset{S(O)}{|}}{P}\left(N\underset{CH_2}{\overset{CH_2}{\diagdown}}\right)_2 .$$
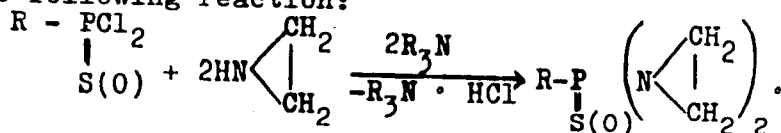
The products were colorless liquids, readily soluble in water and
organic solvents; some of them crystallized on prolonged standing.
Almost all the compounds distilled in vacuum, the one exception
being the diethyleneimide of β-chloroethylthiophosphinic acid
which polymerizes at 100-102°C and 10^{-4}mm pressure probably due to
HCl splitting off which initiates spontaneous polymerization. The
properties and yields of some of the prepared phosphinates and
thiophosphinates are given in tabulated form. Diethyleneimides of
vinylphosphinic and thiophosphinic acids form addition products
with mercaptans and alcohols. With mercaptans the reaction occurs
at 60°C and is complete in 14-15 hrs. or less if catalytic quanti-
ties of sodium alcoholate is present. Ethylmercaptan adds more

Card 2/3

27509
S/079/61/031/009/010/012
D215/D306

Diethyleneimides of alkyl- ...

easily than butyl mercaptan and in general the reaction proceeds
as follows:

$$CH_2 = CHP \binom{N<\overset{CH_2}{\underset{CH_2}{|}}}{O(S)}_2 \xrightarrow{RSH} RSCH_2CH_2P \binom{N<\overset{CH_2}{\underset{CH_2}{|}}}{O(S)}_2 .$$
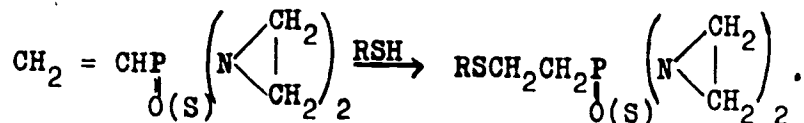
The yields are in the region of 50-60 %. Alcohols unlike mercaptans
add less readily and it was possible to obtain only small yields
of ethyl and butyl alcohol addition products, only after prolonged
heating in the presence of alcoholates. Better yields were obtained
by reacting alcoholates with diethyleneimides of β-chloroethylphos-
phinic acid. There are 2 tables and 3 references: 2 Soviet-bloc
and 1 non-Soviet-bloc. The reference to the English-language publi-
cation reads as follows: U.S. Pat. 2,654,738, 1953; U.S. Pat 2,672,
459, 1952.

SUBMITTED: September 5, 1961

Card 3/3

PETROV, K.A.; GAVRILOVA, A.I.; NAM, V.M.; CHUCHKANOVA, V.P.

Phosphorus-containing analogs of choline and acetylcholine.
Part 1: Phosphorocholines and acetylphosphorocholines.
Zhur.ob.khim. 32 no.11:3711-3716 N '62.   (MIRA 15:11)
                        (Choline)
                (Phosphonium compounds)

PETROV, K.A.; GAVRILOVA, A.I.; BUTILOV, M.M.

Ethylenimides of phosphono- and phosphatocarbonates. Zhur. ob.
khim. 35 no.10:1856-1863 O '65.   (MIRA 18:10)

CHERNOV, V.A., prof.; VOLDARSKAYA, S.M.; GAVRILOVA, A.I.

Antineoplastic activity and toxicity of some ethylene imides of phosphoric and phosphinic acids in connection with their structure. Farm. i toks. 28 no.1:70-73 Ja-F '65.

(MIRA 18:12)

1. Laboratoriya eksperimental'noy khimioterapii opukholey (rukovoditel' - prof. V.A.Chernov) Vsesoyuznogo nauchno-issledovatel'skogo khimiko-farmatsevticheskogo instituta, Moskva. Submitted November 17, 1963.

L 31266-66   EWT(m)/EWP(j)   RM
ACC NR: AP6022806   SOURCE CODE: UR/0079/66/036/002/0363/0363

AUTHOR: Nifant'yev, E. Ye.; Gavrilova, A. I.; Bliznyuk, N. K.

ORG: none
TITLE: New method of synthesizing ethyleneimides of phosphorus acids
SOURCE: Zhurnal obshchey khimii, v. 36, no. 2, 1966, 363
TOPIC TAGS: chemical synthesis, imide, organic phosphorus compound, chemical reaction, esterification, organic imine compound

ABSTRACT: Three new methods were developed for synthesizing phosphoethyleneimides. Dialkyl phosphites were found to react with carbon tetrachloride, ethyleneimino, and triethylamine at 0-20° to form ethyleneimides of dialkylphosphorous acids. Both acid phosphonites, tetraalkyldiamides of phosphorous acid, and alkyl hypophosphites take part in the reaction; in the latter case diethyleneimides of alkylphosphoric acids are formed. Ethyleneimide esters of phosphorous acid are produced by alcoholysis of mixed ethyleneimidodialkylamides when amine hydrochlorides are used as catalysts. Ethyleneimines of trivalent phosphorous acids can be produced by reaction of the corresponding dimethylamides with ethyleneimine under considerably milder conditions than under transamination reactions. These reactions are model syntheses and are now being used to produce otherwise difficulty accessible ethyleneimides of phosphorus acids. [JPRS]

SUB CODE: 07 / SUBM DATE: 13May65

Card 1/1   UDC: 547.26'118 + 547.233

L 36407-66   EWT(m)/EWP(j)   RM

ACC NR: AP6027082   SOURCE CODE: UR/0079/65/035/010/1856/1863

AUTHOR: Petrov, K. A.; Gavrilova, A. I.; Butilov, M. M.

ORG: none

TITLE: Ethylene imides of phosphono- and phosphatocarbonates/

SOURCE: Zhurnal obshchey khimii, v. 35, no. 10, 1965, 1856-1863

TOPIC TAGS: imide, carbonate, chemical synthesis, chemical bonding, chlorinated organic compound, tertiary amine, ethylene, organic phosphorus compound, phosphate

ABSTRACT: The article is devoted to the synthesis of heretofore unknown ethylene imides of phosphono- and phosphatocarbonates, differing from one another chiefly in the bond between the carboxylic acid radical and phosphorus (a P-C and a P-O-C bond). These substances were synthesized in a search for new antitumor agents and in order to determine their activity as a function of structure. (Results of tests of their cytostatic activity will be published later). Monoethyleneimidophosphonocarbonates were prepared by treating equimolar amounts of the corresponding P-monochlorides with ethylene imine in absolute ether in the presence of a tertiary amine:

$$R\diagdown P(CH_2)_nC\diagup^O_{OR'}(Cl) + HN\diagup^{CH_2}_{CH_2}(R_3N) \longrightarrow \diagup^{CH_2}_{CH_2}N\diagdown P(CH_2)_nC\diagup^O_{OR'}(R,O)$$
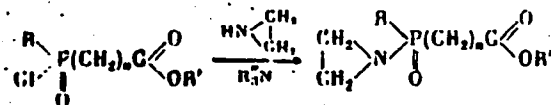
Diethylene and triethylene imides of phosphonocarboxylic acids were synthesized in similar fashion by use of dichlorides and trichlorides of these acids. Heretofore unknown P-chloro-P-allylamido-

Card 1/2   UDC: 546.185+547.486:547.493

L 36497-66

ACC NR: AP6027082

phosphonocarbonates and P-chlorothiolophosphonocarbonates were obtained in 60-70% yields by the reaction
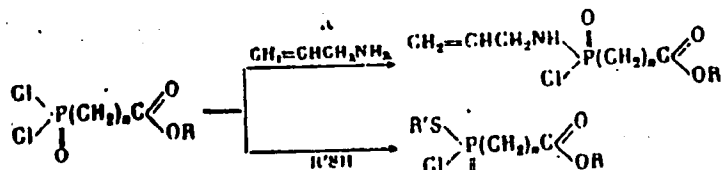
Monochlorophosphates were obtained by the following reactions:
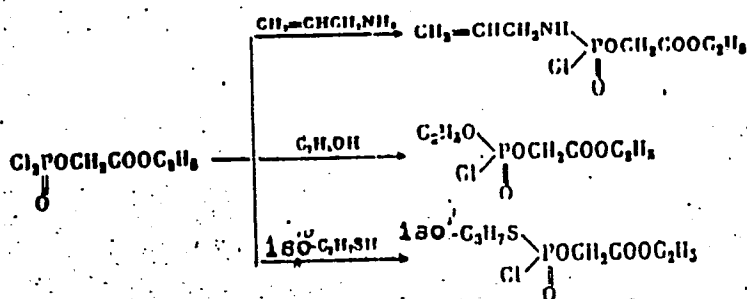
V. P. Korotkova collaborated in the experimental work. Orig. art. has: 2 tables.
SUB CODE: 07 / SUBM DATE: 15Dec64 / ORIG REF: 002 / OTH REF: 001 [JPRS: 36,328]
Card 2/2

GAVRILOVA, A.N.

Changes in the phosphate level of loamy turf-podsolic soils
under the effect of plants. Pochvovedenie no.12:83-86 D '62.

(MIRA 16:2)

1. Institut pochvovedeniya Ministerstva sel'skogo khozyaystva
BSSR.
            (Podzol)   (Soils—Phosphorus content)

GAVRILOVA, A. V.

Foresters

Chkalov foresters as inventors and efficiency experts, Les. khoz. 5 No. 3(42), 1952

Monthly List of Russian Accessions, Library of Congress, July 1952. Unclassified.

G H U R I L O U A   A. U.

USSR / Farm Animals. Reindeer.   Q-3

Abs Jour: Ref Zhur-Biol., No 23, 1958, 105731.

Author : Gavrilova, A. V.
Inst   : Scientific Research Institute of Agriculture
          of the Extreme North.
Title   : On the Shortening of the Period of Barenness
          of Reindeer Mother Does.

Orig Pub: Byul. nauchno-tekhn. inform. N.-i. in-t s.
          kh. Krayn. Severa, 1957, No 3, 6-7.

Abstract: No abstract.

Card 1/1

ACC NR: AR6013666   SOURCE CODE: UR/0058/65/000/010/E031/E031

AUTHOR: Gavrilova, A. V.; Tyapkin, Yu. D.

TITLE: Changes in crystal structure with age hardening in nickel-beryllium and copper-beryllium alloys

SOURCE: Ref. zh. Fizika, Abs. 10E241

REF SOURCE: Sb. tr. In-t metalloved. i fiz. metallov Tsentr. n.-i. in-ta chernoy metallurgii, vyp. 36, 1964, 326-354

TOPIC TAGS: hardness, strain hardening, beryllium containing alloy, metal aging

TRANSLATION: Be atoms collect into monatomic layers parallel to the crystallographic planes of the [100] matrix in the initial hardening stages of Cu-Be (150-200°C) and Ni-Be (400-450°C) (Guinier-Preston zones). When the Guinier-Preston zones combine with the surrounding matrix, a mixing of atoms occurs in the matrix which can be represented as an elastic shift in the [110] planes in the [110] direction. These shifts produce "monoclinic" changes in the initial cubic lattice. A metastable phase occurs in the alloys when the time lag increases or the hardening temperature rises to 300°C (for Cu-Be) and 500°C (for Ni-Be) due to an extension of the Guinier-Preston zone. The structural relationship between the metastable phase and the solid solution is similar to that between ordered and unordered phases in the ordering of an AuCu alloy. The

Card 1/2

ACC NR: AR6013666

"monoclinic" changes in the matrix with the aging of Ni-Be and Cu-Be alloys are due to the character of the stress state in submicrovolumes of the alloy and to the anisotropy of the elastic constants of the cubic matrix. Large elastic distortions (stresses) with the aging of Ni-Be and Cu-Be alloys do not considerable increase their hardness. The hardness increases only at the stage at which these stresses begin a turn in the blocks of the matrix solid solution. 30 references. I. Tulupova.

SUB CODE: 11

Card 2/2

18.1250   2206, 1416, 2808   25892

24.7/00 (1160,1142,1153)   S/070/61/006/004/004/007
                                          E021/E406

AUTHORS: Tyapkin, Yu.D., Bagaryatskiy, Yu.A. and Gavrilova, A.V.

TITLE: Study of the changes in crystal structure of nickel-
              beryllium alloys in the early stages of ageing

PERIODICAL: Kristallografiya, 1961, Vol.6, No.4, pp.560-567 + 3 plates

TEXT: Single crystals of Ni-Be alloys containing 2.2% Be were
quenched from 1100°C and aged at 425 or 500°C. The change in
hardness (Rockwell B) with the total soaking time during tempering
(in minutes and hours) is shown in Fig.1.   The alloys were
studied by X-ray analysis to elucidate the changes in structure.
In the early stages of ageing (30 min to 2 hours at 425°C) the
formation of Guinier-Preston zones considerably enriched in
beryllium occurs.   They are in a plate-form of 1 to 2 atomic layers
thick and parallel to the (100) planes in the matrix.   At the same
time all the solid solution is less-rich in beryllium and
approaches to the equilibrium state.   The depleted matrix divides
into separate blocks which at first have different orientations one
from another.   The blocks are elastically distorted.   There are
cracks with thickness of the order of 20 to 30 Å in the matrix
Card 1/3

25892
S/070/61/006/004/004/007
Study of the changes in crystal ...   E021/E406

along the (110) planes.   At 500°C, the G.P. zones increase in size,
regions with structure close to β phase appear and orientated
rotation of the blocks occurs around one axis of the [100] type.
This rotation reaches 8 to 10° after 32 hours at 500°C.   The high
hardness values of aged Ni-Be alloys is connected not with elastic
distortion in the matrix but, in the main, with the division of the
matrix into blocks and with their rotation relative to one another.
All the observed changes result from the large difference in
atomic volumes of the matrix and the precipitating phase (NiBe)
which reaches 20%.   There are 10 figures and 22 references:
16 Soviet and 6 non-Soviet.   The three references to English
language publications read as follows: M.Hansen, K.Anderko.
Constitution of Binary Alloys, 290. New York - London, 1958;
A.H.Geisler. Phase Transformation in Solids, 454. New York -
London, 1951;   R.B.Nicholson, G.Thoma, J.Natting.   J.Inst.Metals,
87, 12, 429, 1959.

ASSOCIATION: Institut metallovedeniya i fiziki metallov TsNIIChM
               (Institute of Metals Science   and Physics of Metals,
               TsNIIChM)
Card 2/3

L 51966-65   EWT(l)/EWT(m)/EWA(d)/T/EWP(t)/EEC(b)-2/EWP(z)/EWP(b)/EWA(c)
Pi-4   IJP(c)   MJW/JD/HW/JG/GG
ACCESSION NR: AT5011209   UR/2717/64/000/008/0326/0354

AUTHOR: Gavrilova, A. V.; Tyapkin, Yu. D.

TITLE: Changes of crystal structure in aging of nickel-beryllium
and copper-beryllium alloys

SOURCE: Dnepropetrovsk. Institut metallovedeniya i fiziki metallov.
Problemy metallovedeniya i fiziki metallov, no. 8, 1964, 326-354

TOPIC TAGS: crystal structure, metal aging, copper base alloy,
nickel base alloy, beryllium containing alloy, Guinier-Preston zone,
metal hardness

ABSTRACT: The alloys investigated were copper-beryllium MB2 (1.98
wt. % Be), nickel-beryllium NB2.2 (2.2 wt. % Be), and nickel-
beryllium NB 1.5 (1.5 wt. % Be). The nickel-beryllium alloys were
quenched from $1,100^{\circ}C$ and subsequently annealed at 425 and $500^{\circ}C$.
The copper-beryllium alloys were quenched from $860^{\circ}C$ and annealed at
$200-300^{\circ}C$. Measurements were by structural X-ray analysis. In the
first stage of the aging process for the alloys copper-beryllium
$(150-200^{\circ}C)$ and nickel-beryllium $(400-450^{\circ}C)$ the beryllium atoms

Card 1/2

L 51956-65
ACCESSION NR: AT5011209

form monoatomic layers parallel to the crystallographic surfaces of
the matrix, the so-called Guinier-Preston zone. At the same time,
the surrounding matrix is stripped of beryllium. The maximum
"monoclinic" distortion corresponds to an elastic shear nu=0.1. Over
the greater part of the volume of the solid solution, the elastic
shear does not exceed a value of 0.05. With an increase in the
residence time or an increase in temperature up to 300°C (copper-
beryllium) or 500°C (nickel-beryllium), a metastable phase forms in
the alloys as a result of an increase in the thickness of the
Guinier-Preston zone. As a result of the "monoclinic" distortions of
the matrix, in the aging of nickel-beryllium and copper-beryllium
alloys there is a state of stress in their microvolumes and anistropy
of the elastic constants of the cubic matrix. The large elastic
distortions in aging of nickel-beryllium and copper-beryllium alloys
does not lead to a significant increase in hardness. Orig. art. has:
19 figures and 1 table.

ASSOCIATION: Institut metallovedeniya i fiziki metallov, Dnepropetrovsk
(Institute of Physical Metallurgy and Physics of Metals)
SUBMITTED: 00   ENOL: 00   SUB CODE: MM

NR REF SOV: 019   OTHER: 011
Card 2/2

TYAPKIN, Yu.D.; GAVRILOVA, A.V.

    Anomalous X-ray scattering by microscopic single crystals in
    alloys. Initial stage of aging of the alloys nickel-beryllium
    and copper-beryllium. Kristallografiia 9 no.2:213-218 Mr-Ap'64.
                                                    (MIRA 17:5)
    1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy
    metallurgii imeni I.P. Bardina.

L 1939-66   EWT(m)/EWP(w)/T/EWP(t)/EWP(z)/EWP(b)/EWA(c) IJP(c)   MJW(CL)/JD/HW
ACCESSION NR: AP5021946
                                                          UR/0126/65/020/002/0313/0315
                                                          548.53

AUTHOR: Gavrilova, A. V.; Tyapkin, Yu. D.

TITLE: Aging of martensite of iron-nickel alloys having aluminum additions

SOURCE: Fizika metallov i metallovedeniye, v. 20, no. 2, 1965, 313-315

TOPIC TAGS: iron base alloy, nickel containing alloy, aluminum containing alloy,
iron nickel aluminum alloy , maraging alloy, maraging steel

ABSTRACT: Three iron-base alloys, containing   8 Ni-1.5 Al, 29 Ni-2.0 Al, and 29 Ni-
3.5 Al, were investigated in order to determine the mechanism of structural changes
responsible for the significant strength increase under the effect of heat treatment.
The specimens were cooled to -196C and aged at 400—450C.   Aging brought
about precipitation of a secondary phase having a CsCl-type structure and a composi-
tion close to (Fe, Ni)Al. This phase then decomposes in two phases: NiAl and α-Fe.
In spite of the small change in volume, the decomposition causes significant strength-
ening.   Orig. art. has: 1 table.
                                                                          [WW]

ASSOCIATION: TsNIIChERMET im. I. P. Bardina

Card 1/2

L 1939-66
ACCESSION NR: AP5021946

SUBMITTED: 13Jul64   ENCL: 00   SUB CODE: MM

NO REF SOV: 007   OTHER: 001   ATD PRESS: 4415

Card 2/2

BLONSKAYA, A.I.; LOZOVOY, A.V.; GAVRILOVA, A.Ya.; KONIKBERG, M.G.;
        KAZANSKIY, B.A.

        Investigating hydrogenation of lean coals and anthracites
        with a hydrogen pressure greater than 1000 atm. Trudy IGI 9:
        50-61 '59.   (MIRA 13:1)
                        (Coal liquefaction)

The rearrangement of ar(1- and 2)-tetralol allyl ethers. S. I. Sergievskaya and A. E. Gavrilova. *J. Gen. Chem.* (U.S.S.R.) 11, 1027–38(1941).—1-Tetralol (I), NaOMe, and CH₂:CHCH₂Br (II) give 1-tetralyl allyl ether (III), b₁ 117–18°, n 1.574, d 1.090, MR_D calcd. 57.66, found, 58.30, and a little allyl ether of an allyl-1-tetralol, b₁ 136–42°. Catalytic hydrogenation of III gives 1-tetralyl propyl ether, b₁ 128–30°. When III is heated for 2 hrs. at 250° in a stream of CO₂ it rearranges to 2-allyl-1-tetralol (IV), b₁ 139–40°, n 1.567, d 1.050, MR_D calcd. 57.49, found, 57.93. If the rearrangement is run at 240° without CO₂, some I also forms. When I in MePh is treated with finely divided Na and II, it gives III, a mixt. of III and 2-allyl-1-tetralol allyl ether (V), and IV. When IV is heated with a little C₅H₅N.HCl (VI) to 200°, it forms 2,3,6,7,8,9-hexahydro-2-methylnaphtho[1,2-b]furan, b₁ 129–31°. Hydrogenation of IV gives 2-propyl-1-tetralol, m. 40–1°, b₁ 146–7° (*Me* ether b₁₁ 168–4°). IV, McONa, and II give V, b₁₁ 132–4°, which pyrolyzes to 2,4-diallyl-1-tetralol, b₁₁ 145–7°. 2-Tetralol (VII), McONa, and II give 2-tetralyl allyl ether (VIII), b₁ 128–9°, and a small amt. of a compd. b₁ 131–3°. Pyrolysis of VIII gives 3-allyl-2-tetralol (IX), b₁ 140–1°, d 1.062, n 1.573, MR_D calcd. 57.66, found, 58.18. VII and Na in MePh give VIII. 3-allyl-2-tetralyl allyl ether (X), b₁ 135–6°, and IX. When IX is heated with VI it gives 2,3,5,6,7,8-hexahydro-2-methylnaphtho[2,3-b]furan, b₁ 143–5°. Hydrogenation of IX gives 3-propyl-2-tetralol (XI), b₁ 143–4° (*Me* ether b₁ 144–6°). XI, McONa, and II give 3-propyl-2-tetralyl allyl ether, b₁ 141–3°, which pyrolyzes to 1-allyl-3-propyl-2-tetralol, m. 52.5–3.5°, b₁ 157–8°. With VI this forms 2,3,6,7,8,9-hexahydro-2-methyl-4-propylnaphtho[2,3-b]furan, b₁ 161–3°. A test of this with the Grignard reagent shows the absence of OH groups. 1-Bromo-2-tetralol, McONa, and II give 1-bromo-2-tetralyl allyl ether, b₁ 154–6°, n 1.565, d 1.2204, MR_D calcd. 66.27, found, 66.21. Pyrolysis gives 1-bromo-3-allyl-2-tetralol, b₁ 167–8°, n 1.569, d 1.2726, MR_D calcd. 66.25, found, 66.25. Hydrogenation over Pt gives 1-bromo-3-propyl-2-tetralol, b₁ 157–9°, n 1.572, d 1.2319, MR_D calcd. 66.72, found, 66.46. If the hydrogenation is carried out over Pd on C, Br is removed and XI is formed.   H. M. L.

Isomerization of alkanes in the presence of aluminum chloride and hydrogen under pressure. I. Isomerization of normal hexane. N. G. Gonikberg, A. E. Gavrilova, and B. A. Kamenskii (Inst. Org. Chem. Acad. Sci. U.S.S.R., Moscow). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1952, 157-62. — Purified C_6H_{14} was used, although small amts. of unsatd. and aromatic compds. were found to have no effect on the rate of isomerization. Static expts. were run in a closed 185-ml. stainless-steel reactor, with 60 g. C_6H_{14} and solid $AlCl_3$ in lumps of 3-4 mm. size. With over 140 atm., the amt. of H_2 in the reactor was about 101. (S.T.P.) and the liquid was satd. with dissolved H_2 under pressures of 400-500 atm.; under 1000 atm. and over, the liquid was not satd. Under pressure of C_6H_{14} alone, without H_2, 2 liquid layers were formed, an upper layer and a darker lower layer contg. cracking products. With a wt. ratio $r = AlCl_3/C_6H_{14} = 0.5$, at 87°, 1000 atm., in 5 hrs., the upper layer was 81%, the lower 2.8 wt.-% of the charge; the compn. of the upper layer was n-C_6 43.3, iso-C_6 21.0, > C_6 6.8, < C_6 28.9%; at 100°, 1650 atm., 40 and 8.6%, compn. 6.4, 14.3, 16.8, 62.5%. There is, consequently, considerable cracking. No lower liquid layer is formed under sufficiently high pressures of H_2. By fractionation, the liquid contains EtCMe$_3$(I), PrCHMe$_2$(II), and CHMeEt$_2$(III). Examples of data of yields y of C_6 isomers (fraction b. 47-68°) at 100° under a pressure p (atm.) of H_2 are: $r = 0.1$, $p = 75$, y = 10.0%, in 6.5 hrs.; 0.5, 85, 36.4%, in 7.0 hrs; 0.5, 85, 75.3%, in 10.0 hrs.; 1.0, 90, 11.2% in 1.5 hrs.; 1.0, 90, 80.1%, in 4.0 hrs. The rate of the isomerization increases rapidly with the amt. of catalyst. With the progress of the process, the rate first increases, then gradually decreases; there is an induction period at the start. Higher temp. increases the isomerization, whereas higher p of H_2 lowers it; examples, at $r = 0.5$ are (p atm., temp., hrs., y): 85, 100°, 7, 88.4%; 210, 100°, 7, 25.0%; 430, 100°, 6, 8.5%; 1430, 100°, 13, 3.5%; 1000, 80°, 13, 4.5%; 1800, 125°, 6, 33.6%. Addn. of small amts. of C_6H_6 inhibits cracking and permits the use of lower pressures of H_2. Thus, 0.5% C_6H_6 permitted isomerization without substantial cracking under 68 atm. of H_2, and 10% C_6H_6 under 35 atm. But the rate of the isomerization is not significantly affected by C_6H_6. The inhibiting effect of too high p of H_2 can be ascribed, first, to increased soln. of H_2 in the liquid, resulting in a depression of the equil. concn. of the intermediate product; evidence for an intermediate stage accompanied by evolution of H_2 are data on isomerization of C_6H_{14} (Bloch, et al., C.A. 40, 1441[?]). Furthermore, higher p alters the equil. const. of that intermediate stage which involves a change of vol. Under favorable conditions, the isomerization of C_6H_{14} can attain 89%. The amt. of I increases considerably in the concluding stage of the process; at the same time, the amt. of II decreases; as a function of the amt. of I (fraction b. 47-54°), in expts. in which the total yield of isomers is greater than 80%, the amt. of II (fraction b. 54.5-61.5°) passes through a max. This indicates that II is an intermediate stage of the isomerization which further proceeds to formation of I. Support for the stepwise isomerization is seen in the work of Evering and Waugh (C.A. 45, 9442g).   N. Than

GAVRILOVA, A. Ye.

USSR/Chemistry - Pharmaceuticals   Feb 52

"Synthesis of Aminosulfones and Aminosulfides. IX.
New Type of Diaminosulfones," I. Kh. Fel'dman, A. Ye.
Gavrilova, All-Union Sci Res Chem-Phar Inst imeni
S. Ordzhonikidze, Moscow

"Zhur Obshch Khim" Vol XXII, No 2, pp 286-290

Prepd 10 new diaminosulfones of type $RHNC_6H_4SO_2$-
CH_2NHR'. The initial product for this synthesis is
p-acetaminophenylmethylsulfone ($CH_3COHNC_6H_4SO_2CH_2OH$),
whose OH group is very mobile. It reacts easily
with NH_3, primary and secondary amines.

209T26

GAVRILOVA, A. E.

Gonikberg, M. G., Gavrilova, A. E.- "Chemical reactions at ultra-high pressures.
I. Interaction of benzene with anhydrous aluminum chloride." (p. 1384)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1952, Vol. 22, No. 8

GAVRILOVA, A. E.

Gonikberg, M. G., Gavrilova, A. E.- "Chemical reactions at ultra-high pressures.
II. Reaction of benzene with carbon dioxide." (p. 1388)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1952, Vol. 22, No. 8

GAVRILOVA, A. Ye.
GAVRIIKIVA, A, YE.

1 Mar 52

USSR/Chemistry - Hydrocarbons;
            Feuls

"Isomerization of Methylcyclopentane in the Presence of Aluminum Chloride Under Pressure," M. G. Gonikberg, A. F. Plate, A. Ye. Gavrilova, Inst of Org Chem, Acad Sci USSR

"Dik Ak Nauk SSSR " Vol 83, No 1, pp 81-83

Finds that one of the intermediate reactions in the isomerization of methylcyclopentane under pressure using $AlCl_3$ as a catalyst is dehydrogenation. Presented by Acad B. A. Kazanskiy 28 Dec 51

234T3

GAVRILOVA, A. E.

The thermal and catalytic cracking of paraffin hydrocarbons at high pressures. M. G. Gonikberg, A. E. Gavrilova, and B. A. Kazanskii. *Doklady Akad. Nauk S.S.S.R. 89,* (No. 3) 483-6(1953).—Hexane and heptane were subjected to thermal cracking at pressures varying from 100 to 3100 atm. and to catalytic cracking at pressures from 100 to 1250 atm. The temp. was 410–420°. The catalyst was an Al silicate dried in air at 500° for 3 hrs. All expts. lasted 3 hrs. The products were then analyzed by fractional distn. through a 30-plate column. For both types of cracking, expts. with H as the pressurizing agent were also carried out. From the results it was concluded: (1) The velocity of thermal cracking decreases with increasing pressure as evidenced by the extent of reaction. (2) Low pressures of H inhibit thermal cracking while high pressures accelerate it. (3) The catalytic cracking of heptane is accelerated by high pressures. (4) High H pressures accelerate the catalytic cracking. (5) High-pressure catalytic cracking results in more isomerization and less polymerization than is the case for thermal cracking under similar conditions. The pressure effects are not due to shifting of equil. since equil. conditions are never reached in these expts. The catalytic cracking results may be due to the effect of pressure on the rates of adsorption of the hydrocarbon on the catalyst.   Joseph B. Levy

Inst. of Org. Chem. Acad Sci, USSR

GAVRILOVA, A. E.

USSR/Chemistry

Card   : 1/1

Authors   : Gavrilova, A. E., Gonikberg, M. G., Plate, A. F., and Kazanskiy, B. A.
                Academ.
Title   : Thermal decomposition of methylcyclopentane at high hydrogen pressures

Periodical   : Dokl. AN SSSR, 96, Ed. 5, 987 - 990, June 1954

Abstract   : It was established experimentally that an increased hydrogen pressure
                results in noticeable reduction in the rate of decomposition of methyl-
                cyclopentane and increases the yield of liquid reaction products and
                unconverted methylcyclopentane. The fraction of cyclopentane in methyl-
                cyclopentane conversion products increases in proportion to the increase
                in hydrogen pressure. An increase in hydrogen pressure decreases the
                yield of the radical with boiling point of over 60° (to 7 - 10%) after
                which it remains practically unchanged. Ten references. Tables, graphs.

Institution   : Acad. of Sc. USSR, The N. D. Zelinskiy Institute of Organic Chemistry

Submitted   : April 14, 1954

GAVRILOVA, A.E.

Thermal decomposition and destructive hydrogenation of hydrocarbons under high pressure of hydrogen. I. A. Kazanskii, M. G. Gonikberg, A. F. Plate, A. B. Gas llova, and V. E. Nikitenkov (N. D. Zelinskii Inst. Org. Chem., Acad. Sci., Moscow). Kataliticheskoe Gidrirovanie i Okislenie, Akad. Nauk Kazakh. S.S.R., Trudy Konf. 1955, 121-34.—The previously reported results on hydrogenolysis of paraffins, methylcyclopentane and MePh are summarized: cf. C.A. 49, 8155i, 8825h. Possible mechanisms f the cleavage are discussed.   —G. M. Kosolapoff

GAVRILOVA, A.YE.

USSR/Chemical Technology - Chemical Products and Their   I-12
                Application. Treatment of solid mineral fuels

Abs Jour   : Referat Zhur - Khimiya, No 4, 1957, 12869

Author   : Kazanskiy B.A., Gonikberg M.G., Lozovoy A.V., Gavrilova
              A.Ye., Blonskaya A.I.
Inst   : Institute of Mineral Fuels of the Academy of Sciences
              USSR
Title   : Investigation of Hydrogenation of Coal at Hydrogen
              Pressure Above 1000 Atm.

Orig Pub   : Tr. In-ta goryuchikh iskopayemykh AN SSSR, 1955, 6, 3-15

Abstract   : Investigation, under laboratory conditions, of the hy-
              drogenation of coal at 420° and pressure of 300-1700
              atmospheres, with and without an Fe catalyst. It is
              shown that under the given conditions, the Fe catalyst
              has no effect on the hydrogenation process. Increase
              in pressure from 300-400 to 1200-1500 atmospheres dou-
              bles the total yield of gasoline and middle oil fraction,

Card 1/2   - 223 -

SOV/62-58-8-11/22

AUTHORS: Gavrilova, A. Ye., Gonikberg, M. G.; Aleksanyan, V. T.,
              Sterin, Kh. Ye.

TITLE: The Investigation of the Homogeneous Destructive Tetralin
              Hydration at High Hydrogen Pressure (Issledovaniye gomogennogo
              destruktivnogo gidrirovaniya tetralina pri vysokikh davleniyakh
              vodoroda)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk,
              1958, Nr 8, pp. 981-989 (USSR)

ABSTRACT: The present paper is the continuation of a number of preliminary
              papers on the homogeneous destructive hydration of aromatic
              hydrocarbons at high hydrogen pressure. Among the various papers
              by other authors Darwent (Darwent, Ref 5) must be mentioned
              especially; he assumed that the compound of atomic alkyl benzene
              with the simultaneous formation of the unstable free radical
              is based on the last of several reactions. This radical then
              decomposes at the binding $C_{arom} - C_{aliph}$. After further ex-

              planations of this process the authors mention that the break
Card 1/3   of the C - C bond in the binding of the hydrogen atom with the

SOV/62-58-8-11/22

The Investigation of the Homogeneous Destructive Tetralin Hydration at
High Hydrogen Pressure

carbon atom of the ring is to be assumed as probable. With
respect to the break of the C - C bond and the processes con-
nected with it it was of special interest to the authors to
investigate the homogeneous destructive tetralin hydration.
This hydration took place at 440-462°C and at up to 1200
atmospheres of absolute pressure. Based on the investigation
of the reaction products by means of rectification methods and
the taking of combination-dispersion spectra of light (as well
as by means of kinetic data) the authors suggested a general
scheme of the tetralin reactions on the conditions mentioned.
The data obtained agree with the assumptions mentioned in the
present paper with respect to the radical and chain mechanism
of the homogeneous destructive hydration of aromatic hydro-
carbons. There are 1 figure, 4 tables, and 17 references, 8 of
which are Soviet.

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo. Komissiya
po spektroskopii pri OFMN Akademii nauk SSSR (Institute of
Organic Chemistry imeni N. D. Zelinskiy, AS USSR; Committee of
Card 2/3   Spectroscopy OFMN, AS USSR)

SOV/62-58-8-11/22

The Investigation of the Homogeneous Destructive Tetralin Hydration at High Hydrogen Pressure

SUBMITTED: January 25, 1957

Card 3/3

GAVRILOVA, A.Ye.; GONIKBERG, M.G.

Homogeneous destructive hydrogenation of butylphenols under hydrogen
pressure. Izv. AN SSSR. Otd.khim.nauk no.9:1691-1695 S '61.
                                                    (MIRA 14:9)
1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
                    (Phenol) (Hydrogenation)

S/081/61/000/021/060/094
B138/B101

AUTHORS: Gonikberg, M. G., Dorogochinskiy, A. Z., Mitrofanov, M. G.,
             Gavrilova, A. Ye., Kupriyanov, V. A., Mikhaylovskiy, V. K.,
             Vovk, L. M.

TITLE: Homogenous demethylation of toluene. Basic characteristics
             of the process at 750 to 790°C

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1961, 319, abstract
             21L34 (Neftekhimiya, v. 1, no. 1, 1961, 46 - 53)

TEXT: The homogenous demethylation of toluene (I) in a flow system is studied at temperatures of 750 to 790°C and pressures of $\leq$ 40 at. At a volumetric feed rate of 5 to 7 hr^{-1} the conversion of I into C_6H_6 is as much as 75 to 80 % in one run and the C_6H_6 yield is 90 mole%, calculated from the amount of I which has undergone reaction. By rectifying the products of the reaction in a column with a theoretical efficiency of 20

Card 1/2

Homogenous demethylation of toluene...

S/081/61/000/021/060/094
B138/B101

plates, very high purity C_6H_6 is produced, and a small quantity of a mixture
of high boiling-point aromatic hydrocarbons containing ≥ 50 % diphenyl.
The possibility is discussed, of using the bimolecular reaction equation
to provide an approximate description of the kinetic laws governing this
process. [Abstracter's note: Complete translation.]

Card 2/2

GONIKBERG, M.G.; GAVRILOVA, A.Ye.; NIKITENKOV, V.Ye.

Homogeneous destructive hydrogenation of xylenes. Izv. AN SSSR.
Otd.khim.nauk no.9:1711-1713 S '61.   (MIRA 14:9)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
                (Xylene) (Hydrogenation)

5

S/065/62/000/004/001/004
E075/E136

AUTHORS: Gonikberg, M.G., Dorogochinskiy, A.Z.,
              Mitrofanov, M.G., Gavrilova, A.Ye., Dronin, A.P.,
              Kupriyanov, V.A., Makar'yev, S.V., Zamanov, V.V.,
              and ovk, L.M.

TITLE: A process of thermal dealkylation of aromatic
              hydrocarbons

PERIODICAL: Khimiya i tekhnologiya topliv i masel,
              no.4, 1962, 11-15

TEXT: As a result of investigations carried out in the
years 1953-1960 in IOKh AN SSSR and GrozNII, a technological
scheme was developed for an industrial process of thermal
dealkylation of monocyclic aromatics such as toluene and methyl-
naphthalenes. A pilot plant for the process producing
30 000 tons of benzene per annum consists of a small number of
simple units. It contains a tubular furnace of only
3 mil. cal/hour capacity. The main production indices for the
plant are as follows: reactor pressure 50 atm; maximum
temperature 790 °C; separator temperature 35 °C;
Card 1/2